Mouth-to-mouth ventilation does not improve CPR

Scott Gottlieb, New York

When performed by a bystander, cardiopulmonary resuscitation (CPR) with chest compression alone provides similar survival to standard CPR with chest compression plus mouth-to-mouth ventilation in sudden cardiac arrest, according to a new study.

Researchers at the University of Washington in Seattle compared the outcome of 520 cases of cardiac arrest outside the hospital. In each case, a bystander was randomized to receive telephone instructions from a fire department dispatcher that were standard CPR instructions with mouth-to-mouth ventilation or instructions for chest compression alone. Instructions for compression took only 1.4 minutes less than instructions for compression plus mouth-to-mouth breathing, the report indicates.

Overall, 64 patients, 29 (10.4%) in the mouth-to-mouth breathing group and 35 (14.6%) in the chest compression-only group survived to the point of discharge from the hospital, the authors report. This difference was not significant, and adjustment of the results for the patient's age, race, location, fire department response time, and other factors in a logistic regression model yielded similar results (*N Engl J Med* 2000;342:1546-1553).

"This challenges preconceived notions, but provides some proof that the challenge is realistic. I think people need to think rationally and carefully about the process of teaching and performing the various components of CPR," said lead author Alfred Hallstrom, director of the Clinical Trials Coordinating Center in Seattle, which is affiliated with the University of Washington.

Enrollment in the study, which ran from January 1992 to August 1998, totalled 1296 cases of cardiac arrest. However, 776 cases were excluded for various reasons, the most common being misdiagnosis of cardiac arrest and arrest due to drug overdose or alcohol intoxication.

In an editorial accompanying the study, Gordon A Ewy of the University of Arizona Sarver Heart Center called the paper a "landmark study" that "will encourage efforts to re-evaluate the way we teach and perform basic CPR." He said that simplification of CPR instructions would be beneficial: "Authorities in CPR have come to realize that our standard method of performing basic CPR is difficult for the average layperson to learn, retain, and perform" (*N Engl J Med* 2000;342:1599-1600).

Mouth-to-mouth resuscitation should not be abandoned, however, according to a statement from the American Heart Association. "A trained rescuer is very likely going to increase the chances of survival by doing mouth-to-mouth along with chest compression," said Jerry Potts, director of science for the Association's Emergency Cardiovascular Care Program. "People should be taught both components of CPR and be able to respond quickly if someone near them has cardiac arrest."

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Resuscitation methods being demonstrated